

Sub D1 a shell side fluid outlet, wherein a shell side fluid is capable of flowing between said shell side fluid inlet and said shell side fluid outlet in said shell side fluid path extending therebetween;

at least one tube side fluid inlet;

at least one tube side fluid outlet, said tubes extending between said tube side fluid inlet and said tube side fluid outlet, wherein said shell side fluid path extending between said shell side inlet and said shell side fluid outlet is arranged in a cross flow fluid arrangement with respect to each of said tube side fluid inlets and said tubes; and

a plurality of isolation and flow direction control plates positioned normal to said shell side fluid path and in parallel with said tube side fluid inlet and said tubes in the shell of the heat exchanger assembly for creating adjacent smaller heat exchangers, each of said isolation and flow direction control plates including

at least one fluid slot for permitting fluid communication between corresponding adjacent smaller heat exchangers, said fluid slots extending normal to said shell side fluid path and in parallel with said tubes.

2. The heat exchanger assembly according to claim 1, wherein each of said isolation and flow direction control plates is a rectangular shaped plate.

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3. The heat exchanger assembly according to claim 2, wherein each of said fluid slots is a rectangular shaped fluid slot.

4. The heat exchanger assembly according to claim 1, wherein each of said fluid slots is a rectangular shaped fluid slot.

5. The heat exchanger assembly according to claim 1, wherein said tubes form at least one U-shaped tube bundle.

6. The heat exchanger assembly according to claim 1, said isolation and flow direction control plates having a pressure loss coefficient, said pressure loss coefficients contributing to an acceptable pressure loss for each of said smaller heat exchangers.

8. (Thrice Amended) A method of controlling a fluid flow for a heat exchanger assembly, said heat exchanger assembly including a shell having a shell side fluid path; a plurality of tubes; a shell side fluid inlet; a shell side fluid outlet, wherein a shell side fluid is capable of flowing between said shell side fluid inlet and said shell side fluid outlet in said shell side fluid path extending therebetween; at least one tube side fluid inlet; at least one tube side fluid outlet, said tubes extending between said tube side fluid inlet and said

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D1 } tube side fluid outlet, wherein said shell side fluid path extending between said shell side inlet and said shell side fluid outlet is arranged in a cross flow fluid arrangement with respect to each of said tube side fluid inlets and said tubes; said method comprising:

creating a plurality of smaller heat exchangers by providing a plurality isolation and flow direction control plates in a shell side of the heat exchanger assembly, wherein each of said isolation and flow direction control plates includes at least one fluid slot for permitting the fluid flow to pass through said isolation and flow direction control plate, said fluid slots extending normal to said shell side fluid path and in parallel with said tubes; and

isolating and directing the fluid flow on the shell side of the heat exchanger assembly between each of said smaller heat exchangers.

11. The method according to claim 8, wherein each slot is a rectangular slot.

12. The method according to claim 8, further comprising:
varying a period of time during which the fluid flow on said shell side of the heat exchanger assembly resides in said smaller heat exchangers.

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P1 13. The method according to claim 8, wherein said isolation and flow direction control plates are rectangular plates.

14. The method according to claim 8, further comprising:
calculating a plurality of acceptable pressure losses through each of said smaller heat exchangers; and
sizing said isolation and flow direction control plates to permit fluid flow within said acceptable pressure losses.

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P1 17. The heat exchanger assembly according to claim 1, wherein at least one of said plurality of said isolation and flow direction control plates includes a plurality of said fluid slots, and said plurality of fluid slots include slots having different cross sectional areas.

18. The heat exchanger assembly according to claim 17, wherein said at least one of said plurality of said isolation and flow direction control plates including said fluid slots is positioned adjacent to said shell side fluid outlet.

19. A turbine assembly having an integral heat exchanger assembly,
said heat exchanger comprising:

a shell having a shell side fluid path;

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a plurality of tubes;

a shell side fluid inlet;

a shell side fluid outlet, wherein a shell side fluid is capable of flowing between said shell side fluid inlet and said shell side fluid outlet in said shell side fluid path extending therebetween, wherein said shell side fluid outlet is an inlet to said turbine assembly;

at least one tube side fluid inlet;

at least one tube side fluid outlet, said tubes extending between said tube side fluid inlet and said tube side fluid outlet, wherein said shell side fluid path extending between said shell side inlet and said shell side fluid outlet is arranged in a cross flow fluid arrangement with respect to each of said tube side fluid inlets and said tubes; and

a plurality of isolation and flow direction control plates positioned normal to said shell side fluid path and in parallel with said tube side fluid inlet and said tubes in the shell of the heat exchanger assembly for creating adjacent smaller heat exchangers, each of said isolation and flow direction control plates including

at least one fluid slot for permitting fluid communication between corresponding adjacent smaller heat exchangers, said fluid slots extending normal to said shell side fluid path and in parallel with said tubes.

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20. The method according to claim 8, wherein said isolation and flow direction control plate includes a plurality of said fluid slots, and said plurality of fluid slots include slots having different cross sectional areas.

21. (Amended) A method of controlling a fluid flow to a turbine assembly, wherein said turbine assembly includes an integral heat exchanger assembly, said heat exchanger assembly including a shell; a plurality of tubes; a shell side fluid inlet; a shell side fluid outlet; at least one tube side fluid inlet; at least one tube side fluid outlet; wherein said shell side fluid inlet and said shell side fluid outlet are arranged in a cross flow fluid path with respect to each of said tube side fluid inlets, said method comprising:

creating a plurality of smaller heat exchangers by providing at least one isolation and flow direction control plate in a shell side of the heat exchanger assembly, wherein each of said isolation and flow direction control plates includes at least one fluid slot for permitting the fluid flow to pass through said isolation and flow direction control plate;

isolating and directing the fluid flow on the shell side of the heat exchanger assembly between each of said smaller heat exchangers; and

operatively connecting said heat exchanger assembly to an inlet of a turbine assembly, said at least one fluid slot of said isolation and flow direction control plate positioned adjacent to said inlet of the turbine assembly.